

CLAIMS

1/ A driving wheel element comprising:

a wheel and

an electric motor for rotating the wheel, wherein the

5 electric motor is a synchronous motor having a permanent-magnet rotor and a stator comprising teeth and respective individual windings on said teeth.

2/ A driving wheel according to claim 1, wherein the

10 rotor is a flux-concentrating rotor and has magnets disposed between pole pieces.

3/ A driving wheel according to claim 1, wherein the

wheel is coupled to the motor via stepdown gearing.

15 4/ A driving wheel according to claim 3, wherein the gearing comprises a single stepdown stage, preferably with a stepdown ratio less than or equal to 15, in particular lying in the range 7 to 2.

20 5/ A driving wheel according to claim 4, wherein the gearing comprises an epicyclic gear train.

25 6/ A driving wheel according to claim 1, including a main casing comprising a large-diameter tubular wall and a small-diameter tubular wall interconnected by a transverse wall, the stator being received in the large diameter wall, which wall is secured to a first bearing-forming piece, the small-diameter tubular wall being secured to a second bearing-forming piece.

30 7/ A driving wheel according to claim 6, wherein the second bearing-forming piece also constitutes a planet-carrier and has at least one pin rotatably carrying at least one planet wheel.

8/ A driving wheel according to claim 7, wherein said planet-carrier carries three planet wheels, each planet wheel meshing with a gear cut in or fitted to the rotor shaft, and also with a ring gear of a support.

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9/ A driving wheel according to claim 7, wherein a rim supporting a tire is fixed to the support.

10/ A driving wheel according to claim 9, wherein the support rotates via a bearing on the small-diameter tubular wall of the main casing.

11/ A driving wheel according to claim 7, including a cap fitted in leaktight manner to the support.

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12/ A driving wheel element according to claim 6, including an electromagnetic brake that operates in the event of a power failure, the brake being fitted to said first bearing-forming teeth, and comprising a disk fixed to a fluted end of the motor shaft.

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13/ A driving wheel according to claim 6, wherein the main casing is mounted to swivel about a vertical axis.

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14/ A driving wheel according to claim 6, wherein the motor drives a wheel and wherein the main casing is fixed in non-swivel manner to the chassis of the cart.

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15/ A driving wheel according to claim 1, wherein the rotor is coaxial with the tire of the wheel.

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16/ A hoisting winch comprising:
a winch and
an electric motor for rotating the winch, wherein the electric motor is a synchronous motor having a permanent-magnet rotor and a stator comprising teeth and respective individual windings on said teeth.

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17/ A hoisting winch according to claim 16, wherein the rotor is a flux-concentrating rotor and has magnets disposed between pole pieces.

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18/ A hoisting winch according to claim 16, wherein the winch is coupled to the motor via stepdown gearing.

10 19/ A hoisting winch according to claim 18, wherein the gearing comprises a single stepdown stage, preferably with a stepdown ratio less than or equal to 15, in particular lying in the range 7 to 2.

15 20/ A hoisting winch according to claim 19, wherein the gearing comprises an epicyclic gear train.

20 21/ A hoisting winch according to claim 16, including a main casing comprising a large-diameter tubular wall and a small-diameter tubular wall interconnected by a transverse wall, the stator being received in the large diameter wall, which wall is secured to a first bearing-forming piece, the small-diameter tubular wall being secured to a second bearing-forming piece.

25 22/ A hoisting winch according to claim 21, wherein the second bearing-forming piece also constitutes a planet-carrier and has at least one pin rotatably carrying at least one planet winch.

30 23/ A hoisting winch according to claim 22, wherein said planet-carrier carries three planet wheels, each planet wheel meshing with a gear cut in or fitted to the rotor shaft, and also with a ring gear of a support.

35 24/ A hoisting winch according to claim 23, wherein the support rotates via a bearing on the small-diameter tubular wall of the main casing.

25/ A hoisting winch according to claim 22, including a cap fitted in leaktight manner to the support.

5 26/ A hoisting winch according to claim 21, including an electromagnetic brake that operates in the event of a power failure, the brake being fitted to said first bearing-forming teeth, and comprising a disk fixed to a fluted end of the motor shaft.

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